CUMULATIVE EFFECTS OF THREE HURRICANES IN ONE SEASON ON ALBEMARLE SOUND AND PAMLICO SOUND, NORTH CAROLINA

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NASA's AOL3 LIDAR fluorosensor and SeaWiFS sensors were flown on NOAA's Twin Otter observation plane over the Pamlico and Albemarle Sounds and coastal waters of North Carolina within 8 days after Hurricane Floyd passed over eastern North Carolina on 16 September 1999. Hurricane Floyd was the second of three hurricanes to affect the central coast of North Carolina during a 45 day period in the late summer of 1999. Three more missions were flown over the same areas within the next 5 weeks. Data for chlorophyll, colored dissolved organic materials (CDOM) and cyanobacteria (590 nm) were corrected using surface verification samples and mapped using ArcView. The highest chlorophyll, CDOM and cyanobacteria concentrations were displaced from the Pamlico and Neuse Rivers out into the central basin of Pamlico Sound and from the Alligator River into Albemarle Sound. A response time of more than 3 months was required before the river-estuarine system resumed a normal configuration wherein the highest biomass of chlorophyll emanated from the rivers. Surface chlorophyll concentrations remained higher than average for up to 6 months.